Exhibit D

Invalidity Chart for the '726 Patent (Baumann and the '056 Patent)

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INVALIDITY CLAIM CHART D U.S. PATENT NO. 5,686,726 (Baumann and '056 Patent)

The '726 patent is invalid as anticipated under 35 U.S.C. § 102(b) by and/or obvious under 35 U.S.C. § 103(a) over the Baumann reference, either alone or in view of the '056 patent. To the extent it is found that any reference does not anticipate the asserted claims, each reference renders them obvious under 35 U.S.C. § 103(a), either alone or in combination with the other prior art identified in the cover pleading or herein. Moreover, to the extent it is found that any reference does not expressly disclose certain limitations in the asserted claims, such limitations may be inherent.

5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
Claim 1			
A composition of matter comprising			
a population of multiply charged polyatomic ions derived from a distinct polyatomic parent molecular species,	Baumann discloses populations of multiply charged ions that are generated from distinct polyatomic molecules as well as from noble gases. See Baumann, Figures 1-2, 8-13, Tables 1-2.		Each element of claim 1 of the '726 patent is found in or rendered obvious by Baumann. Claim 1 of the '726 patent differs from Baumann in the range of charge states recited.
all molecules of said distinct polyatomic parent molecular species having substantially the same molecular weight and chemical identity,	Baumann analyzes single molecular species so all molecules of the parent molecular species have substantially the same molecular weight and are chemically identical.		Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges in claim 1 of the '726 patent is therefore not
the number of charges on each ion in said population of multiply charged polyatomic ions defining that ion's charge state number, said population of multiply charged polyatomic ions comprising a plurality of sub-populations of ions, all the ions of each of said sub-populations having the same charge state number, said same charge state number differing	Baumann discloses populations of multiply charged ions where the number of charges defines the ion's charge state number. Tables 1 and 2 and Figures 8-13 show that ions in the same subpopulations have the same charge state number, where the charge state numbers differ from the charge state numbers of the neighboring sub-populations.		patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382.
from the charge state numbers of the ions in the other sub-populations of said plurality of subpopulations, said plurality of sub-populations comprising one sub-population for each	The maximum values of the charge state number for the		

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with a smallest value not less than three and extending to a largest value not less than five. Claim 3, depends from claim 1 The composition of matter of claim 1 in which said smallest value of charge state number is not less than ten. Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13. Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13. Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13. Figures 8-13. Claim 5 of the 726 patent differs from Baumann in the range of charges recited. Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges disclosed in Baumann. See In re Wentheim, 541 F. 2d at 267: In re Peterson, 65 U.S.P.Q.2 dat 1382. Claim 5, depends from claim 1 The composition of matter of claim 1 in which said polyatomic parent plop of the parent molecular species is selected from a class of compounds known as biopolymers. Claim 6, depends from claim 1 The composition of matter of claim 1 in which said polyatomic parent plop of the parent molecular species is not a switchetic parent in which said sid distinct polyatomic parent plop of the parent molecular species is not a switchetic parent in the produces to the parent molecular species is not a switchetic parent in the produces to the parent molecular species is not a switchetic player as prefered in a claim overlaps or like the range of charges disclosed in Baumann in t	5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
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The composition of matter of claim 1 None of the parent molecular in which said distinct polyatomic parent species analyzed by Baumann is Species analyzed	Claim 6 depends from claim 1			
in which said distinct polyatomic parent species analyzed by Baumann is would understand the		None of the parent molecular		One of ordinary skill in the art
	molecular species is not a synthetic	a synthetic polymer such as PEG.		disclosure of Baumann to

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
polymers [sic] such as a poly (ethylene			anticipate or render obvious
glycol), having less than four different			claim 6 of the '726 patent
constituent elemental species.			including excluding compounds
			like polyethylene glycols.
Claim O dan anda frama alaim 1			
Claim 8, depends from claim 1		The 1050 certaint (see the efficient	On a facility of the said
The composition of matter as claimed in claim 1 in which said distinct polyatomic parent molecular species has a molecular weight not less than 5000.		The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)." See '056 Patent at 3:7-14.	One of ordinary skill in the art would understand the '056 patent to disclose the application of electrospray methods to a "distinct polyatomic parent molecular species [that] has a molecular weight not less than about 5000" to produce the composition of claim 8 of the '726 patent.
Claim 9			
A composition of matter comprising			
one or more populations of multiply	Baumann discloses populations		Each element of claim 9 of the
charged polyatomic ions derived from a	of multiply charged ions that are		'726 patent is found in or
sample comprising at least one	generated from distinct		rendered obvious by Baumann
polyatomic parent molecular species,	polyatomic molecules as well as from noble gases. See		in view of the '056 patent.
	Baumann, Figures 1-2, 8-13,		Claim 9 of the '726 patent
	Tables 1-2.		differs from Baumann in the

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
the number of charges on each ion	Baumann discloses populations		range of charge states recited.
defining said ion's charge state number,	of multiply charged ions where		Where the range recited in a
said population of multiply charged	the number of charges defines		claim overlaps or lies within the
polyatomic ions formed from said at	the ion's charge state number.		prior art, a prima facie case of
least one polyatomic parent molecular	Tables 1 and 2 and Figures 8-13		obviousness exists and the
species comprising a plurality of sub-	show that the sub-populations		range of charges in claim 9 of
populations, the ions of each sub-	have the same charge state		the '726 patent is therefore not
population having the same charge	number, where the charge state		patentably distinct from the
state number,	numbers differ by one from the		range of charges disclosed in
said charge state number differing by	charge state numbers of the		Baumann. See In re Wertheim,
one from the next largest and the next	neighboring sub-populations.		541 F.2d at 267; In re Peterson,
smallest values of charge state number			65 U.S.P.Q.2d at 1382.
found in the other sub-populations of			
said plurality,			Furthermore, the added process
the ions of each of said sub-populations	Baumann discloses that the ions		steps were known in the
having a value of said charge state	generated may have up to thirty		electrospray mass spectrometry
number that is not less than five, said	charges. See Section 3.3,		art as exemplified by the
composition of matter being formed by:	Figures 8-13.		disclosure of the '056 patent,
dispersing a solution of said sample	- igaice or in	The '056 patent teaches the	which describes electrospray
containing said at least one polyatomic		electrospray ionization	ionization.
parent molecular species into a bath gas		technique, describing how the	
as charged droplets, said dispersing		sample to be ionized is	
taking place in the presence of an		dissolved in a solvent, which is	
electric field; and		displaced through the capillary	
allowing the solvent of said solution to		of the apparatus into a "region"	
evaporate from said charged droplets		of high pressure and electrical	
until at least some molecules of said		field" wherein the liquid	
polyatomic parent molecular species		emerging becomes "charged"	
become dispersed in said bath gas as		and the solvent begins to	
said multiply charged polyatomic ions.		evaporate into charged	
		droplets, which are directed into	
		the mass spectrometer	
		analyzer. See '056 patent at	
		2:53- 3:62.	
Claim 10, depends from claim 9			
The composition of matter of claim 9	Baumann discloses that the ions		Claim 10 of the '726 patent
in which the charge state number of the	generated may have up to thirty		differs from Baumann in the
ions in each of said sub-populations of	charges. See Section 3.3,		range of charge states recited.

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
said plurality of sub-populations is at least seven.	Figures 8-13.		Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges in claim 10 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382.
Claim 11, depends from claim 9			
The composition of matter of claim 9 in which all molecules of said at least one of said polyatomic parent molecular species have substantially the same molecular weight.	Baumann analyzes single molecular species so all molecules of the parent molecular species have substantially the same molecular weight.		One of ordinary skill in the art would understand the disclosure of Baumann to anticipate or render obvious claim 11 of the '726 patent including forming the compositions from compounds having substantially the same molecular weight.
Claim 16			
A composition of matter comprising			
one or more distinct populations of multiply charged polyatomic ions generated from a sample comprising one or more distinct polyatomic parent molecular species,	Baumann discloses populations of multiply charged ions that are generated from distinct polyatomic molecules as well as from noble gases. See Baumann, Figures 1-2, 8-13, Tables 1-2.		Each element of claim 16 of the '726 patent is found in or rendered obvious by Baumann. Claim 16 of the '726 patent differs from Baumann in the range of charge states recited.

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
the number of charges on each ion defining the ion's charge state number, each of said populations of polyatomic ions comprising a plurality of subpopulations, each of said plurality of sub-populations being comprised of ions formed from one of said distinct polyatomic parent molecular species	Baumann discloses populations of multiply charged ions where the number of charges defines the ion's charge state number. Tables 1 and 2 and Figures 8-13 show that the sub-populations have the same charge state number.	THE GOOT GIGHT	Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges in claim 16 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in
and having the same charge state number, there being at least one of said populations of multiply charged polyatomic ions that comprises one of said sub-populations for each value of charge state number beginning with a smallest value of three and extending to a largest value not less than five.	Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13.		Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382.
Claim 18, depends from claim 16 The composition of matter of claim 16 in which said smallest value of charge state number is not less than seven and said largest value of charge state number is not less than ten.	Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13.		Claim 18 of the '726 patent differs from Baumann in the range of charge states recited. Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges in claim 18 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382.
Claim 19, depends from claim 16	Damas and and an arrival		One of andinomical SILS of the state
The composition of matter of claim 16 in which all molecules of each of said	Baumann analyzes single		One of ordinary skill in the art would understand the
distinct polyatomic parent molecular	molecular species so all molecules of the parent molecular		disclosure of Baumann to
species have substantially the same	species have substantially the		anticipate or render obvious

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
molecular weight.	same molecular weight.		claim 19 of the '726 patent including forming the compositions from compounds having substantially the same molecular weight.
Object On the second form of the Ad			
Claim 20, depends from claim 16 The composition of matter in claim 16 in which at least one of said distinct polyatomic parent molecular species is selected from a class of compounds known as biopolymers.		The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)" and that "[i]t is therefore well suited for the ionisation of thermally unstable molecules, such as those frequently encountered in biochemistry." See '056 Patent at 3:7-14.	One of ordinary skill in the art would understand the disclosure of the '056 patent to teach the application of electrospray ionization methods to "biopolymers" to produce the compositions of claim 20 of the '726 patent.
Claim 21, depends from claim 16 The composition of matter in claim 16 in which at least one of said distinct polyatomic parent molecular species is selected from the group comprising proteins, peptides, polypeptides, carbohydrates, oligonucleotides and glycoproteins.		The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)" and that "[i]t is therefore well suited for the ionisation of thermally unstable molecules, such as those frequently encountered in biochemistry." See '056 Patent at 3:7-14.	One of ordinary skill in the art would understand the disclosure of the '056 patent to teach the application of electrospray ionization methods to make the compositions from "proteins, peptides, polypeptides, carbohydrates, oligonucleotides and glycoproteins" according to claim 21 of the '726 patent.
Claim 22, depends from alaim 46			
Claim 22, depends from claim 16 The composition of matter of claim 16 in which at least one of said distinct polyatomic parent molecular species is not a synthetic polymer, such as a poly (ethylene glycol), having less than four	None of the parent molecular species analyzed by Baumann is a synthetic polymer such as PEG.		One of ordinary skill in the art would understand the disclosure of Baumann to anticipate or render obvious claim 22 of the '726 patent including excluding compounds

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
different constituent elemental species.			like polyethylene glycols.
·			
Claim 23, depends from claim 16			
The composition of matter of claim 16 in which at least one of said distinct polyatomic parent molecular species has a molecular weight not less than about 5000.		The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)." See '056 Patent at 3:7-14.	One of ordinary skill in the art would understand disclosure of the '056 patent to disclose the application of electrospray methods to a "distinct polyatomic parent molecular species [that] has a molecular weight not less than about 5000" to produce the compositions of claim 23 of the '726 patent.
Claim 24			
A composition of matter comprising			
one or more distinct populations of multiply charged polyatomic ions generated from a sample comprising one or more distinct polyatomic parent molecular species,	Baumann discloses populations of multiply charged ions that are generated from a sample comprising distinct polyatomic molecules as well as from noble gases. See Baumann, Figures 1-2, 8-13, Tables 1-2.		Each element of claim 24 of the '726 patent is found in or rendered obvious by Baumann. Claim 24 of the '726 patent differs from Baumann in the range of charge states recited.
the number of charges on each ion defining its charge state number, each of said populations of multiply charged polyatomic ions comprising ions formed from one of said distinct polyatomic molecular species and being comprised of a plurality of subpopulations, the ions of each of said sub-populations having the same charge state number,	Baumann discloses populations of multiply charged ions where the number of charges defines the ion's charge state number. Tables 1 and 2 and Figures 8-13 show the populations of multiply charged ions comprise ions from distinct polyatomic molecular species and that that the subpopulations have the same charge state number.		Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges in claim 24 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382.
there being one of said sub-populations for each value of said charge state number beginning with a smallest value not less than three and extending to a	Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13.		

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
largest value not less than five.			
Claim 26, depends from claim 24			
The composition of matter of claim 24 in which at least one of said distinct polyatomic parent molecular species is selected from a class of compounds known as biopolymers.		The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)" and that "[i]t is therefore well suited for the ionisation of thermally unstable molecules, such as those frequently encountered in biochemistry." See '056 Patent at 3:7-14.	One of ordinary skill in the art would understand the disclosure of the '056 patent to teach the application of electrospray ionization methods to "biopolymers" to produce the compositions of claim 26 of the '726 patent.
Claim 27, depends from claim 24			
The composition of matter of claim 24 in which at least one of said distinct polyatomic parent molecular species is selected from the group comprising proteins, peptides polypeptides, carbohydrates, oligonucleotides and glycoproteins.		The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)." See '056 Patent at 3:7-14.	One of ordinary skill in the art would understand the disclosure of the '056 patent to teach the application of electrospray ionization methods to make the compositions from "proteins, peptides polypeptides, carbohydrates, oligonucleotides and glycoproteins" according to claim 27 of the '726 patent.
Claim 28, depends from claim 24 The composition of matter of claim 24 in which at least one of said distinct polyatomic parent molecular species is not selected from the group comprising synthetic polymers having less than four different constituent elemental species, said group comprising poly (ethylene glycol)s.	None of the parent molecular species analyzed by Baumann is a synthetic polymer such as PEG.		One of ordinary skill in the art would understand the disclosure of Baumann to anticipate or render obvious claim 28 of the '726 patent including excluding compounds like polyethylene glycols.
Claim 29, depends from claim 24			

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
The composition of matter of claim 24 in which at least one of said distinct polyatomic parent molecular species has a molecular weight not less than 5000.		The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)." See '056 Patent at 3:7-14.	One of ordinary skill in the art would understand the '056 patent to disclose the application of electrospray methods to a "distinct polyatomic parent molecular species [that] has a molecular weight not less than about 5000" to produce the composition of claim 29 of the '726 patent.
Claim 31			
A composition of matter comprising			
one or more distinct populations of multiply charged polyatomic ions generated from a sample comprising one or more distinct polyatomic parent molecular species,	Baumann discloses populations of multiply charged ions that are generated from distinct polyatomic molecules as well as from noble gases. See Baumann, Figures 1-2, 8-13, Tables 1-2.		Each element of claim 31 of the '726 patent is found in or rendered obvious by Baumann in view of the '056 patent. Claim 31 of the '726 patent differs from Baumann in the
the number of charges on each ion defining the ion's charge state number, each of said populations of multiply charged polyatomic ions comprising ions formed from one of said distinct polyatomic parent molecular species in said sampler [sic] at least one of said populations of multiply charged polyatomic ions being comprised of a plurality of sub-populations,	Baumann discloses populations of multiply charged ions where the number of charges defines the ion's charge state number and where the populations of multiply charged ions are comprised of a plurality of subpopulations.		range of charge states recited. Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges in claim 31 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim,
the ions of each of said sub-populations having the same value of charge state number, that value being different from the values of charge state number in all the other sub-populations of ions in said plurality of sub-populations, the smallest value of charge state number of the ions in said plurality of sub-populations being	Tables 1 and 2 and Figures 8-13 show that ions in the same subpopulations have the same charge state number, where the charge state numbers differ from the charge state numbers of the neighboring sub-populations. Baumann discloses that the ions		541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382. Furthermore, the added process steps were known in the electrospray mass spectrometry art as exemplified by the disclosure of the '056 patent,

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
not less than three,	generated may have up to thirty charges. See Section 3.3, Figures 8-13.		which describes electrospray ionization.
said composition of matter being formed by: dispersing a solution containing said one or more distinct polyatomic parent molecular species into a bath gas as charged droplets, said dispersing taking place in the presence of an electric field. allowing the solvent of said solution to evaporate from said charged droplets until at least some molecules of said distinct polyatomic parent molecular species become dispersed in said bath gas as said multiply charged ions.		The '056 patent teaches the electrospray ionization technique, describing how the sample to be ionized is dissolved in a solvent, which is displaced through the capillary of the apparatus into a "region of high pressure and electrical field" wherein the liquid emerging becomes "charged" and the solvent begins to evaporate into charged droplets, which are directed into the mass spectrometer analyzer. See '056 patent at 2:53-3:62.	
Claim 33, depends from claim 31			
The composition of matter of claim 31 in which said smallest value of charge state number is not less than seven.	Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13.		Claim 33 of the '726 patent differs from Baumann in the range of charge states recited. Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges in claim 33 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382.
Claim 35, depends from claim 31			
The composition of matter of claim 31 in which all molecules of at least one of	Baumann analyzes single		One of ordinary skill in the art would understand the
in which all molecules of at least one of	molecular species so all		would understand the

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
said distinct polyatomic parent	molecules of the parent molecular		disclosure of Baumann to
molecular species have the same	species have the same chemical		anticipate or render obvious
chemical formula.	formula.		claim 35 of the '726 patent
			including forming the
			compositions from compounds having the same chemical
			formula.
			Torridia.
Claim 43			
A composition of matter comprising			
one or more populations of multiply	Baumann discloses populations		Each element of claim 43 of the
charged polyatomic ions generated from	of multiply charged ions that are		'726 patent is found in or
a sample comprising one or more	generated from distinct		rendered obvious by Baumann.
distinct polyatomic parent molecular	polyatomic molecules as well as		Olaina 40 af the 1700 material
species,	from noble gases. See		Claim 43 of the '726 patent differs from Baumann in the
	Baumann, Figures 1-2, 8-13, Tables 1-2.		range of charge states recited.
the number of charges on each ion	Baumann discloses populations		Where the range recited in a
defining the ion's charge state number,	of multiply charged ions where		claim overlaps or lies within the
each of said populations of multiply	the number of charges defines		prior art, a prima facie case of
charged polyatomic ions comprising	the ion's charge state number.		obviousness exists and the
ions formed from one of said one or	Tables 1 and 2 and Figures 8-13		range of charges in claim 43 of
more distinct polyatomic parent	show that the sub-populations		the '726 patent is therefore not
molecular species,	have the same charge state		patentably distinct from the
at least one of said populations of ions	number.		range of charges disclosed in
comprising a plurality of sub-populations			Baumann. See In re Wertheim,
of ions, all the ions in each sub-			541 F.2d at 267; In re Peterson,
population having the same charge			65 U.S.P.Q.2d at 1382.
state number,	Decimand discloses that the ions		
said at least one of said populations comprising one such sub-population for	Baumann discloses that the ions generated may have up to thirty		Including the "calculation" and "determination" of the molecular
each possible value of charge state	charges. See Section 3.3,		weight from the values of
number beginning with a smallest value	Figures 8-13.		mass/charge (m/z) step recited
not less than three and extending to a	1 194.00 0 10.		in claim 43 of the '726 patent is
largest value not less than five,			not only obvious, but also does

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
said composition of matter being useful in the determination of a value of molecular weight for one or more of said distinct polyatomic parent molecular species, said determination of molecular weight being achieved by means of a mass analysis of ions from said one or more populations of ions and a calculation of the molecular weight values of said one or more polyatomic parent molecular species from the values of mass/charge (m/z) obtained by said mass analysis for the ions in said one or more populations of polyatomic ions.	One skilled in the art at the time of the invention would have understood the relationship between mass/molecular weight and m/z ratio and could have performed the calculations with the m/z values. See, e.g., Baumann Figures 8-13.		not render the otherwise invalid claim patentable. See, e.g., Parker v. Flook, 47 U.S. 548, 98 S.Ct. 2522 (1978).
Claim 45, depends from claim 43 The composition of matter of claim 43 in which said smallest value of charge state number is not less than seven and said largest value of charge state number is not less than ten.	Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13.		Claim 45 of the '726 patent differs from Baumann in the range of charge states recited. Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges in claim 45 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382.
Claim 46, depends from claim 43			
The composition of matter of claim 43 in which all molecules of any particular one of said distinct polyatomic parent molecular species have substantially the same molecular weight.	Baumann analyzes single molecular species so all molecules of the parent molecular species have substantially the same molecular weight.		One of ordinary skill in the art would understand the disclosure of Baumann to anticipate or render obvious claim 46 of the '726 patent including forming the

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
			compositions from compounds having substantially the same molecular weight.
Claim 47, depends from claim 43			
The composition of matter of claim 43 in which at least one of said distinct polyatomic parent molecular species is selected from a class of compounds known as biopolymers.		The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)" and that "[i]t is therefore well suited for the ionisation of thermally unstable molecules, such as those frequently encountered in biochemistry." See '056 Patent at 3:7-14.	One of ordinary skill in the art would understand the disclosure of the '056 patent to teach the application of electrospray ionization methods to "biopolymers" to produce the compositions of claim 47 of the '726 patent.
Claim 48, depends from 43			
The composition of matter of claim 43 in which at least one of said distinct polyatomic parent molecular species is selected from the group comprising proteins, peptides, polypeptides, carbohydrates, oligonucleotides and glycoproteins.		The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)" and that "[i]t is therefore well suited for the ionisation of thermally unstable molecules, such as those frequently encountered in	One of ordinary skill in the art would understand the disclosure of the '056 patent to teach the application of electrospray ionization methods to make the compositions from "proteins, peptides, polypeptides, carbohydrates, oligonucleotides and
		biochemistry." See '056 Patent at 3:7-14.	glycoproteins" according to claim 48 of the '726 patent.
Claim 49, depends from 43			
The composition of matter of claim 43 in which at lease [sic] one of said distinct polyatomic parent molecular species is not selected from the group of synthetic polymers having less than four different distinct elemental constituent species, said group comprising poly (ethylene glycol)s.	None of the parent molecular species analyzed by Baumann is a synthetic polymer such as PEG.		One of ordinary skill in the art would understand the disclosure of Baumann to anticipate or render obvious claim 49 of the '726 patent including excluding compounds like polyethylene glycols.

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
Claim 50, depends from 43			
The composition of matter of claim 43 in which at least one of said distinct polyatomic parent molecular species has a molecular weight not less than 5000.		The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)." See '056 Patent at 3:7-14.	One of ordinary skill in the art would understand the '056 patent to disclose the application of electrospray methods to a "distinct polyatomic parent molecular species [that] has a molecular weight not less than about 5000" to produce the composition of claim 50 of the '726 patent.
			- Zo paterni
Claim 51			
The composition of matter comprising			
one or more populations of multiply charged polyatomic ions generated from a sample comprising one or more distinct polyatomic parent molecular species,	Baumann discloses populations of multiply charged ions that are generated from distinct polyatomic molecules as well as from noble gases. See Figures 1-2, 8-13, Tables 1-2.		Each element of claim 51 of the '726 patent is found in or rendered obvious by Baumann. Claim 51 of the '726 patent differs from Baumann in the
the number of charges on each ion defining the ion's charge state number, each of said populations comprising ions formed from one of said one or more distinct polyatomic parent molecular species, at least one of said populations of multiply charged polyatomic ions comprising a plurality of sub-populations of ions, all the ions in each sub-population having the same charge state number,	Baumann discloses populations of multiply charged ions where the number of charges defines the ion's charge state number and where the populations of multiply charged ions are comprised of a plurality of subpopulations. Tables 1 and 2 and Figures 8-13 show that ions in the same subpopulations have the same charge state number, where the charge state numbers differ from the charge state numbers of the neighboring sub-populations.		range of charge states recited. Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges in claim 51 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382. Including the "calculation" and "determining" of the molecular
said same charge state number differing from the charge state numbers of the	Tables 1 and 2 and Figures 8-13 show that ions in the same sub-		weight from the values of mass/charge (m/z) step recited

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
ion in the other sub-populations of said population, said charge state number having a value of at least five for all the ions in said at least one of said populations of multiply charged polyatomic ions, said composition of matter being useful for determining the molecular weight of one or more of said distinct polyatomic parent molecular species, said determination of the molecular weight being achieved by a mass analysis of the ions in said one or more populations of multiply charged polyatomic ions together with a calculation of the said molecular weight of said one or more polyatomic parent molecular species from the values of mass/charge (m/z) obtained by mass analysis of ions in said one or more populations of multiply	populations have the same charge state number, where the charge state numbers differ from the charge state numbers of the neighboring sub-populations. Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13. One skilled in the art at the time of the invention would have understood the relationship between mass/molecular weight and m/z ratio and could have performed the calculations with the m/z values. See, e.g., Figures 8-13.		in claim 51 of the '726 patent is not only obvious, but also does not render the otherwise invalid claim patentable. See, e.g., Parker v. Flook, 47 U.S. 548, 98 S.Ct. 2522 (1978).
charged polyatomic ions.			
Claim 52, depends from claim 51 The composition of matter of claim 51 in which every ion in said at least one of said populations of multiply charged polyatomic ions has a charge state number not less than seven.	Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13.		Claim 52 of the '726 patent differs from Baumann in the range of charge states recited. Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges in claim 52 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson,

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
			65 U.S.P.Q.2d at 1382.
Claim 57			
A composition of matter comprising			
one or more distinct populations of multiply charged polyatomic ions generated from a sample comprising one or more distinct polyatomic parent molecular species,	Baumann discloses populations of multiply charged ions that are generated from distinct polyatomic molecules as well as from noble gases. See Baumann, Figures 1-2, 8-13, Tables 1-2.		Each element of claim 57 of the '726 patent is found in or rendered obvious by Baumann in view of the '056 patent. Claim 57 of the '726 patent differs from Baumann in the
the number of charges on each ion defining the ion's charge state number, each of said multiply charged polyatomic ions in any one of said one or more distinct populations having been formed from one of said distinct polyatomic parent molecular species in said sample, at least one of said distinct populations of multiply charged polyatomic ions comprising a plurality of sub-populations of ions, all the ions in each sub-population of said plurality of sub-populations having the same charge state number,	Baumann discloses populations of multiply charged ions where the number of charges defines the ion's charge state number. Tables 1 and 2 and Figures 8-13 show that ions in the same subpopulations have the same charge state number, where the charge state numbers differ from the charge state numbers of the neighboring sub-populations.		range of charge states recited. Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges in claim 57 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382. Furthermore, the added process steps were known in the
said same charge state number differing from the charge state numbers of the ions in the other sub-populations of said plurality of sub-populations, said plurality of sub-populations comprising one such sub-population for each possible value of charge state number beginning with a smallest value not less than three and extending to a largest value not less than five,	Tables 1 and 2 and Figures 8-13 show that ions in the same subpopulations have the same charge state number, where the charge state numbers differ from the charge state numbers of the neighboring sub-populations. Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13.		electrospray mass spectrometry art as exemplified by the disclosure of the '056 patent, which describes electrospray ionization. Including "the property that the molecular weight of each of said distinct polyatomic parent molecular species in said sample can be calculated

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
said composition of matter being formed by: dispersing a solution containing said polyatomic parent molecular species into a bath gas as charged droplets, said dispersing taking place in the presence of an electric field; allowing the solvent of said solution to evaporate from said charged droplets until at least some molecules of said distinct polyatomic parent molecular species become dispersed in said bath gas as said multiply charged polyatomic ions; said composition of matter having the property that the molecular weight of	One skilled in the art at the time of the invention would have	The '056 patent teaches the electrospray ionization technique, describing how the sample to be ionized is dissolved in a solvent, which is displaced through the capillary of the apparatus into a "region of high pressure and electrical field" wherein the liquid emerging becomes "charged" and the solvent begins to evaporate into charged droplets, which are directed into the mass spectrometer analyzer. See '056 patent at 2:53-3:62.	mass/charge (m/z) values," recited in claim 57 of the '726 patent is not only obvious, but also does not render the otherwise invalid claim patentable. See, e.g., Parker v. Flook, 47 U.S. 548, 98 S.Ct. 2522 (1978).
each of said distinct polyatomic parent molecular species in said sample can be calculated from the mass/charge (m/z) values of the multiply charged polyatomic ions produced from that species.	understood the relationship between mass/molecular weight and m/z ratio and could have performed the calculations with the m/z values. See, e.g., Baumann Figures 8-13.		
Claim 59, depends from claim 51			
The composition of matter of claim 51 in which said smallest value of charge state number is not less than seven and said largest value is not less than ten.	Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13.		Claim 59 of the '726 patent differs from Baumann in the range of charge states recited. Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges in claim 59 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson,

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
			65 U.S.P.Q.2d at 1382.
Claim 60, depends from claim 51			
The composition of matter of claim 51 in which all molecules of any particular one of said distinct polyatomic parent molecular species have substantially the same molecular weight.	Baumann analyzes single molecular species so all molecules of the parent molecular species have substantially the same molecular weight.		One of ordinary skill in the art would understand the disclosure of Baumann to anticipate or render obvious claim 60 of the '726 patent including forming the claimed composition from compounds having substantially the same molecular weight.
Claim 61, depends from claim 51 The composition of matter of claim 51 in which at least one of said distinct polyatomic parent molecular species is selected from the class of compounds known as biopolymers.		The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)" and that "[i]t is therefore well suited for the ionisation of thermally unstable molecules, such as those frequently encountered in biochemistry." See '056 Patent at 3:7-14.	One of ordinary skill in the art would understand the disclosure of the '056 patent to teach the application of electrospray ionization methods to "biopolymers" to produce the compositions of claim 61 of the '726 patent.
Claim 62, depends from claim 51 The composition of matter of claim 51 in which at least one of said distinct polyatomic parent molecular species is selected from the group comprising proteins, peptides, polypeptides, carbohydrates, oligonucleotides and glycoproteins.		The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)" and that "[i]t is therefore well suited for the ionisation of thermally unstable molecules, such as those frequently encountered in biochemistry." See '056 Patent at 3:7-14.	One of ordinary skill in the art would understand the disclosure of the '056 patent to teach the application of electrospray ionization methods to make the compositions from "proteins, peptides, polypeptides, carbohydrates, oligonucleotides and glycoproteins" according to claim 62 of the '726 patent.

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
Claim 63, depends from claim 51			
The composition of matter of claim 51 in which at least one of said distinct polyatomic parent molecular species is not selected from the group of synthetic polymers comprising less than four different constituent elemental species, said group comprising poly (ethylene glycol)s.	None of the parent molecular species analyzed by Baumann is a synthetic polymer such as PEG.		One of ordinary skill in the art would understand the disclosure of Baumann to anticipate or render obvious claim 63 of the '726 patent including excluding compounds like polyethylene glycols.
Claim 68			
A composition of matter that by mass analysis of its component ions is found to comprise one or more distinct populations of multiply charged polyatomic ions,	Baumann discloses the use of a PIG ion source to generate populations of multiply charged ions that are generated from distinct polyatomic molecules as well as from noble gases. See Baumann, Figures 1-2, 8-13, Tables 1-2.		Each element of claim 68 of the '726 patent is found in or rendered obvious by Baumann in view of the '056 patent. Claim 68 of the '726 patent differs from Baumann in the range of charge states recited.
the number of charges on each ion defining the ion's charge state number, each of said distinct populations of multiply charged polyatomic ions comprising ions having been formed from a polyatomic parent molecular species, at least one of said distinct populations of multiply charged polyatomic ions comprising a plurality of sub-populations of ions, all the ions in each sub-population having the same charge state number, said charge state number differing from the charge state number of the other sub-populations in said plurality of sub-	Baumann discloses populations of multiply charged ions where the number of charges defines the ion's charge state number. Tables 1 and 2 and Figures 8-13 show that ions in the same subpopulations have the same charge state number, where the charge state numbers differ from the charge state numbers of the neighboring sub-populations.		Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges in claim 68 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382. Furthermore, the added process steps were known in the electrospray mass spectrometry
populations, said plurality of sub-populations comprising one such sub-population for each possible value of charge state number beginning with a smallest value	Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13.		art as exemplified by the disclosure of the '056 patent, which describes electrospray ionization.

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
not less than three and extending to a largest value not less than five,			
said composition of matter being formed by: dispersing a solution containing one or more polyatomic molecular species into a bath gas as charged droplets, said dispersing taking place in the presence of an electric field; allowing the solvent of said solution to evaporate from said charged droplets until at least some molecules of said polyatomic parent molecular species become dispersed in said bath gas as said multiply charged polyatomic ions; said mass analysis being carried out on a portion of said multiply charged polyatomic ions in said bath gas that is introduced into a vacuum system containing a mass analyzer.		The '056 patent further describes the electrospray ionization technique, describing how the sample to be ionized is dissolved in a solvent, which is displaced through the capillary of the apparatus into a "region of high pressure and electrical field" wherein the liquid emerging becomes "charged" and the solvent begins to evaporate into charged droplets, which are directed into the mass spectrometer analyzer. The '056 patent indicates the ESI technique uses a vacuum system. See '056 patent at 2:53- 3:62.	
Claim 70, depends from claim 68			
The composition of matter of claim 68 in which said smallest value of charge state number is not less than seven and said largest value is not less than ten.	Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13.		Claim 70 of the '726 patent differs from Baumann in the range of charge states recited. Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges in claim 70 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382.
Claim 72, depends from claim 68			

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
The composition of matter of claim 68 in which at least one of said distinct polyatomic parent molecular species in said solution is selected from a class of compounds known as biopolymers.		The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)" and that "[i]t is therefore well suited for the ionisation of thermally unstable molecules, such as those frequently encountered in biochemistry." See '056 Patent at 3:7-14.	One of ordinary skill in the art would understand the disclosure of the '056 patent to teach the application electrospray ionization methods to "biopolymers" to produce the compositions of claim 72 of the '726 patent.
Claim 73, depends from claim 68			
The composition of matter of claim 68 in which at least one of said distinct polyatomic parent molecular species in said solution has a molecular weight not less than 5000.		The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)." See '056 Patent at 3:7-14.	One of ordinary skill in the art would understand the '056 patent to disclose the application of electrospray methods to a "distinct polyatomic parent molecular species [that] has a molecular weight not less than about 5000" to produce the composition of claim 73 of the '726 patent.
Claim 74			
A composition of matter derived from a sample comprising			
one or more distinct polyatomic parent molecular species,	Baumann discloses populations of multiply charged ions that are generated from distinct polyatomic molecules as well as from noble gases. See Baumann, Figures 1-2, 8-13, Tables 1-2.		Each element of claim 74 of the '726 patent is found in or rendered obvious by Baumann. Claim 74 of the '726 patent differs from Baumann in the range of charge states recited.
all molecules of each of said distinct polyatomic parent molecular species having substantially the same molecular weight and chemical identity,	Baumann analyzes single molecular species so all molecules of the parent molecular species have substantially the		Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
	same molecular weight and are		range of charges in claim 74 of
	chemically identical.		the '726 patent is therefore not
said composition of matter comprising	Baumann discloses populations		patentably distinct from the
one or more distinct populations of	of multiply charged ions where		range of charges disclosed in
polyatomic ions, at least one of said	the number of charges defines		Baumann. See In re Wertheim,
distinct populations of ions comprising	the ion's charge state number.		541 F.2d at 267; In re Peterson,
multiply charged ions formed from one	Tables 1 and 2 and Figures 8-13		65 U.S.P.Q.2d at 1382.
of said one or more distinct polyatomic	show that ions in the same sub-		
parent molecular species in said	populations have the same		
sample, the number of charges on each	charge state number, where the		
ion defining the charge state number of	charge state numbers differ from		
that ion,	the charge state numbers of the		
	neighboring sub-populations.		
each of said populations of multiply	Baumann discloses the use of a		
charged ions having the property that	PIG ion source to generate		
when its ions are mass analyzed they	populations of multiply charged		
give rise to a mass spectrum comprising	ions that are generated from		
a multiplicity of peaks, said multiplicity of	distinct polyatomic molecules as		
peaks comprising at least one coherent	well as from noble gases that are		
sequence of peaks, the ions of each	mass analyzed to generate mass		
peak in said coherent sequence having	spectra of multiple peaks		
the same charge state number, said	comprising at least one sequence		
charge state number being greater thorn	of peaks. See Baumann, Figures		
[sic] unity and differing by one unit from	1-2, 9-13, Tables 1-2.		
the charge state numbers of the ions of	Figures 9-13 show that the		
each immediately adjacent peak in said	population of ions comprises a		
coherent sequence,	plurality of subpopulations, the		
	ions in each sub-population		
	having the same charge state		
	number and also show that the		
	number of charges differs from		
	the charge state numbers of the		
	ions of each immediately		
	adjacent peak in said coherent		
	sequence.		
said coherent sequence of peaks	Figures 9-13 show that the		
comprising one peak for each different	sequence of peaks comprises		
value of charge state number beginning	one peak for each different		
with a smallest value not less than three	charge state number.		

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
and extending to a largest value not less than five.	Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13.		
Claim 76, depends from claim 74 The composition of matter of claim 74 in which at least one of said distinct polyatomic parent molecular species is selected from a class of compounds known as biopolymers.		The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)" and that "[i]t is therefore well suited for the ionisation of thermally unstable molecules, such as those frequently encountered in biochemistry." See '056 Patent at 3:7-14.	One of ordinary skill in the art would understand the disclosure of the '056 patent to teach the application electrospray ionization methods to "biopolymers" to produce the compositions of claim 76 of the '726 patent.
Claim 77, depends from claim 74			
The composition of matter of claim 74 in which at least one of said distinct polyatomic parent molecular species is not selected from the group comprising poly (ethylene glycol)s.	None of the parent molecular species analyzed by Baumann is a synthetic polymer such as PEG.		One of ordinary skill in the art would understand the disclosure of Baumann to anticipate or render obvious claim 77 of the '726 patent including excluding compounds like polyethylene glycols.
01: 70 1 1: 74			
Claim 78, depends from claim 74 The composition of matter of claim 74 in which at least one of said distinct polyatomic parent molecular species has a molecular weight not less than about 5000.		The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)." See '056 Patent at 3:7-14.	One of ordinary skill in the art would understand the disclosure of the '056 patent to disclose the application of electrospray methods to a "distinct polyatomic parent molecular species [that] has a molecular weight not less than about 5000" to produce the compositions of claim 78 of the '726 patent.

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
Claim 101 A composition of matter comprising one or more populations of polyatomic gaseous ions, at least one of said populations comprising multiply charged ions formed from the same chemically distinct parent species of polyatomic neutral molecules, said same chemically distinct species of polyatomic neutral molecules not including synthetic polymers such as poly (ethylene glycol)s, all of said multiply charged ions, formed from said same chemically distinct species of polyatomic neutral molecules, having at least three charges.	Figures 8-13 and Tables 1-2 exemplify compositions comprising a population of multiply charged polyatomic ions. Baumann indicates that the multiply charged ions are from "Nobel gases and some gaseous compounds." Baumann at 517. None of the parent molecular species analyzed by Baumann is a synthetic polymer such as PEG. Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13.		Each element of claim 101 of the '726 patent is found in or rendered obvious by Baumann. Claim 101 of the '726 patent differs from Baumann in the range of charge states recited. Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges in claim 101 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382.
Claim 103, depends from claim 101 A composition of matter according to claim 101 in which all of said multiply charged polyatomic ions, formed from, said chemically distinct species of polyatomic neutral molecules, have at least seven charges.	Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13.		Claim 103 of the '726 patent differs from Baumann in the range of charge states recited. Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges in claim 103 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382.
Claim 104			

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
A composition of matter comprising	Figures 8-13 and Tables 1-2		Each element of claim 104 of
one or more populations of polyatomic	exemplify compositions		the '726 patent is found in or
gaseous ions,	comprising a population of		rendered obvious by Baumann.
at least one of said populations of	multiply charged polyatomic ions.		
polyatomic ions comprising multiply	Baumann discloses populations		Claim 104 of the '726 patent
charged ions formed from the same	of multiply charged ions that are		differs from Baumann in the
chemically distinct parent species of	generated from distinct		range of charge states recited.
polyatomic neutral molecules,	polyatomic molecules. Baumann		Where the range recited in a
	indicates that the multiply		claim overlaps or lies within the
	charged ions are from "Nobel		prior art, a prima facie case of
	gases and some gaseous		obviousness exists and the
	compounds." Baumann at 517.		range of charges in claim 104 of
said chemically distinct parent species	None of the parent molecular		the '726 patent is therefore not
of polyatomic molecules not being	species analyzed by Baumann is		patentably distinct from the
selected from the class comprising	a synthetic polymer such as PEG.		range of charges disclosed in Baumann. See In re Wertheim,
oligomers of synthetic polymers such as			541 F.2d at 267; In re Peterson,
poly (ethylene glycol)s,	Doumens discloses nonviolisms		65 U.S.P.Q.2d at 1382.
the number of charges on each ion	Baumann discloses populations		65 U.S.P.Q.20 at 1362.
defining the charge state number of that ion, said at least one of said populations	of multiply charged ions where the number of charges defines		
of polyatomic multiply charged ions	the ion's charge state number.		
comprising a plurality of sub-	Tables 1 and 2 and Figures 8-13		
populations,	show that the sub-populations		
populations,	have the same charge state		
	number.		
one such sub-population for each	Baumann discloses that the ions		-
possible integral value of charge state	generated may have up to thirty		
number beginning with a smallest value	charges. See Section 3.3,		
not less than three and extending to a	Figures 8-13.		
largest value not less than five.	1 194.000		
Jan Garage			
Claim 105, depends from claim 104			
A composition of matter according to	Baumann discloses that the ions		Claim 105 of the '726 patent
claim 104	generated may have up to thirty		differs from Baumann in the
	charges. See Section 3.3,		range of charge states recited.
in which said smallest value of charge	Figures 8-13.		Where the range recited in a
state number is not less than five and			claim overlaps or lies within the
said largest value is not less than seven.			prior art, a prima facie case of
			obviousness exists and the

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
			range of charges in claim 105 of
			the '726 patent is therefore not patentably distinct from the
			range of charges disclosed in
			Baumann. See In re Wertheim,
			541 F.2d at 267; In re Peterson,
			65 U.S.P.Q.2d at 1382.
Claim 106, depends from claim 104			
A composition of matter according to	Baumann discloses that the ions		Claim 106 of the '726 patent
claim 104	generated may have up to thirty		differs from Baumann in the range of charge states recited.
in which said smallest value of charge	charges. See Section 3.3, Figures 8-13.		Where the range recited in a
state number is not less than seven and	rigules 0-13.		claim overlaps or lies within the
said largest value is not less than ten.			prior art, a prima facie case of
ŭ			obviousness exists and the
			range of charges in claim 106 of
			the '726 patent is therefore not
			patentably distinct from the
			range of charges disclosed in
			Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson,
			65 U.S.P.Q.2d at 1382.
			00 0.0.1 .0.20 00 1002.
Claim 107			
A composition of matter comprising	Figures 8-13 and Tables 1-2		Each element of claim 107 of
one or more populations of polyatomic	exemplify compositions		the '726 patent is found in or
gaseous ions,	comprising a population of		rendered obvious by Baumann
	multiply charged polyatomic ions. Baumann indicates that the		in view of the disclosure of the '056 patent.
	multiply charged ions are from		056 patent.
	"Nobel gases and some gaseous		Claim 107 of the '726 patent
	compounds." Baumann at 517.		differs from Baumann in the
			range of charge states recited.
all of the ions in at least one of said	Baumann discloses that the ions		Where the range recited in a
populations comprising multiply charged	generated may have up to thirty		claim overlaps or lies within the
polyatomic ions having a net charge	charges. See Section 3.3,		prior art, a prima facie case of
equal to or greater than three	Figures 8-13.		obviousness exists and the
elementary charges and			range of charges in claim 107 of

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
a composition characterized by the empirical chemical formula (Cc Hh Nn Oo Ss Pp Tt Uu Vv Ww Yy) wherein upper case letters C, H, N, O, S, P stand respectively for the elements Carbon, Hydrogen, Nitrogen, Oxygen, Sulfur, Phosphorous and T, U, V, W, Y each stand for other elements in the Periodic Table, the lower case subscript letters associated with each of said upper case letters symbolizing an integer equal to the number of atoms of the corresponding element in said ion, all the ions with three or more charges in at least one of said one or more populations of ions having compositions such that the number of different subscripts c, h, o, n, p, s, t, u, v, w, y having values greater than zero is five or less, said ions not being derived from a member of the class of synthetic polymers that include poly (ethylene glycol)s.	None of the parent molecular species analyzed by Baumann is a synthetic polymer such as PEG.	The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)" and that "[i]t is therefore well suited for the ionisation of thermally unstable molecules, such as those frequently encountered in biochemistry." See '056 Patent at 3:7-14.	the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382. Additionally, claim 107 recites the elements present in the composition of matter according to an empirical chemical formula, "Cc Hh Nn Oo Ss Pp Tt Uu Vv Ww Yy", and the "number of different subscripts c, h, o, n, p, s, t, u, v, w, y having values greater than zero is five or less." It would have been obvious in view of the '056 patent to apply electrospray ionization to the analysis of biomolecules because one skilled in the art would have recognized that at least one class of molecules frequently encountered in biochemistry, nucleic acids can include (by virtue of their constituent nucleotides) carbon, hydrogen, oxygen, nitrogen, and phosphorus.
Claim 100 depends from claim 107			
Claim 108, depends from claim 107 A composition of matter as in claim 107 in which all the ions in said at least one population of multiply charged polyatomic ions have at least five charges.	Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13.		Claim 108 of the '726 patent differs from Baumann in the range of charge states recited. Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
			range of charges in claim 108 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382.
Claim 109, depends from claim 107			
A composition of matter as in claim 107 in which all the ions in said at least one population of multiply charged polyatomic ions have at least seven charges.	Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13.		Claim 109 of the '726 patent differs from Baumann in the range of charge states recited. Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the range of charges in claim 109 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382.
Claim 110			
A composition of matter comprising one or more populations of gaseous ions,	Figures 8-13 and Tables 1-2 exemplify compositions comprising a population of multiply charged polyatomic ions. Baumann indicates that the multiply charged ions are from "nobel gases and some gaseous compounds." Baumann at 517.		Each element of claim 110 of the '726 patent is found in or rendered obvious by Baumann in view of the disclosure of the '056 patent. Claim 110 of the '726 patent differs from Baumann in the
at least one of said populations comprising multiply charged polyatomic ions having a net charge equal to or greater than three elementary charges and	Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13.		range of charge states recited. Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of obviousness exists and the

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
a composition characterized by the empirical chemical formula (Cc Hh Nn Oo Ss Pp Tt Uu Vv Ww Yy) wherein upper case letters C, H, N, O, S, P stand respectively for the elements Carbon, Hydrogen, Nitrogen, Oxygen, Sulfur, Phosphorous and T, U, V, W, Y each stand for other elements in the Periodic Table, the lower case letters symbolizing an integer equal to the number of atoms of the corresponding element in said ion, all the ions with three or more charges in at least one of said one or more populations of polyatomic ions having compositions such that the number of different subscripts c, h, n, o, p, s, t, u, v, w, y having values greater than zero is greater than five.		The '056 patent teaches "the electrospray technique produces ions from solutes of very high molecular weights (e.g. 500,000)" and that "[i]t is therefore well suited for the ionisation of thermally unstable molecules, such as those frequently encountered in biochemistry." See '056 Patent at 3:7-14.	range of charges in claim 110 of the '726 patent is therefore not patentably distinct from the range of charges disclosed in Baumann. See In re Wertheim, 541 F.2d at 267; In re Peterson, 65 U.S.P.Q.2d at 1382. Additionally, claim 110 recites the elements present in the composition of matter according to an empirical chemical formula, "Cc Hh Nn Oo Ss Pp Tt Uu Vv Ww Yy", and the "number of different subscripts c, h, o, n, p, s, t, u, v, w, y having values greater than zero is five or less." It would have been obvious in view of the '056 patent to apply electrospray ionization to the analysis of biomolecules because one skilled in the art would have recognized that at least one class of molecules frequently encountered in biochemistry, nucleic acids can include (by virtue of their constituent nucleotides) carbon, hydrogen, oxygen, nitrogen, and phosphorus.
Claim 111, depends from claim 110			
A composition of matter as in claim 110 in which all the ions in said at least one population of multiply charged polyatomic ions have at least five charges and a composition such that the number of different subscripts c, h, n, o,	Baumann discloses that the ions generated may have up to thirty charges. See Section 3.3, Figures 8-13.		Claim 111 of the '726 patent differs from Baumann in the range of charge states recited. Where the range recited in a claim overlaps or lies within the prior art, a prima facie case of

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5,686,726	Baumann	The '056 Patent	Basis of Invalidity Contention
p, s, t, u, v, w, y having values greater			obviousness exists and the
than zero is greater than five.			range of charges in claim 111 of
			the '726 patent is therefore not patentably distinct from the
			range of charges disclosed in
			Baumann. See In re Wertheim,
			541 F.2d at 267; In re Peterson,
			65 U.S.P.Q.2d at 1382.
Claim 112, depends from 110			
A composition of matter as in claim 110	Baumann discloses that the ions		Claim 112 of the '726 patent
in which all the ions in said at least one	generated may have up to thirty		differs from Baumann in the
population of multiply charged polyatomic ions have at least seven	charges. See Section 3.3, Figures 8-13.		range of charge states recited. Where the range recited in a
charges and a composition such that the	Figures 6-13.		claim overlaps or lies within the
number of different subscripts c, h, n, o,			prior art, a prima facie case of
p, s, t, u, v, w having values greater than			obviousness exists and the
zero is greater than five.			range of charges in claim 112 of
			the '726 patent is therefore not
			patentably distinct from the
			range of charges disclosed in
			Baumann. See In re Wertheim,
			541 F.2d at 267; In re Peterson,
			65 U.S.P.Q.2d at 1382.